

REMARKS

Claims 1-4, 12, 14 and 23 have been amended. Claims 1-23 and 25 remain for further consideration. No new matter has been added.

The objections and rejections shall be taken up in the order presented in the Official Action (hereinafter the “Action”).

5. Claims 2-4, 12 and 14-23 currently stand rejected under 35 U.S.C. §112, second paragraph, for allegedly being indefinite.

Claims 2-4, 12, 14 and 23 have been amended. As a result, it is respectfully submitted that these rejections are now moot.

11. Claims 1, 5-10 and 13 currently stand rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over U.S. Appln. No. 2003/0039874 to Jankowski et al (hereinafter “Jankowski”) in view of U.S. Appln. No. 2002/0076586 to Tanaka (hereinafter “Tanaka”).

INDEPENDENT CLAIM 1

Claim 1 recites an integrated fuel cell and integrated circuit device. The device includes, *inter alia*:

“a reservoir containing fuel disposed with the first electrode; and
a reactant delivery device configured to provide a reactant, where the reactant reacts with protons from the fuel to generate current, the reactant delivery device positioned on the side of the second electrode;
where the fuel is integrated into the material of at least one of the first electrode and an adjacent layer....” (Emphasis added).

The Action contends that the combination of Jankowski and Tanaka teaches such a device. Specifically, the Action contends that Jankowski incorporates a fuel reservoir as part of a package, and that Tanaka discloses a hydrogen absorber that acts as a fuel source. (Action, pgs 3-

4). The Action next contends that it would have been obvious to one of ordinary skill in the art to incorporate a layer of material having fuel integrated therein onto an anode of the fuel cell of Jankowski because Tanaka teaches that this material can serve as a reservoir of fuel when the initial fuel source is not available. (Action, pg 4). The Applicant respectfully disagrees.

Both Jankowski and Tanaka disclose portable power sources. In Jankowski, the portable power source includes a fuel cell, a manifold structure and a fuel reservoir. (Jankowski, ¶[0012], ¶[0018]). In particular, as illustrated in FIG. 1 (see Exhibit A below), the fuel reservoir (not shown), which may be incorporated with the fuel cell as a single package or as a modular cartridge that can easily be replaced, provides fuel to an electrode 25 through a fuel inlet 15 and a fuel channel 29 in a host structure substrate 11 (i.e., the manifold structure). (Jankowski, ¶[0018] and ¶[0032]). Advantageously, this manifold structure “*enables a complete fuel cell device to be realized which can be readily attached to fuel and oxidant sources*” (e.g., the fuel reservoir). (see Jankowski, ¶[0033]). The manifold structure further allows for multiple fuel cells in a stacked configuration to be connected to a common fuel reservoir. (see Jankowski, ¶[0032]). In Tanaka, the portable power source includes a fuel absorber 11 that acts as a fuel source for absorbing and supporting hydrogen, and that supplies hydrogen to a fuel electrode 12. (Tanaka, ¶[0054] and FIG. 1).

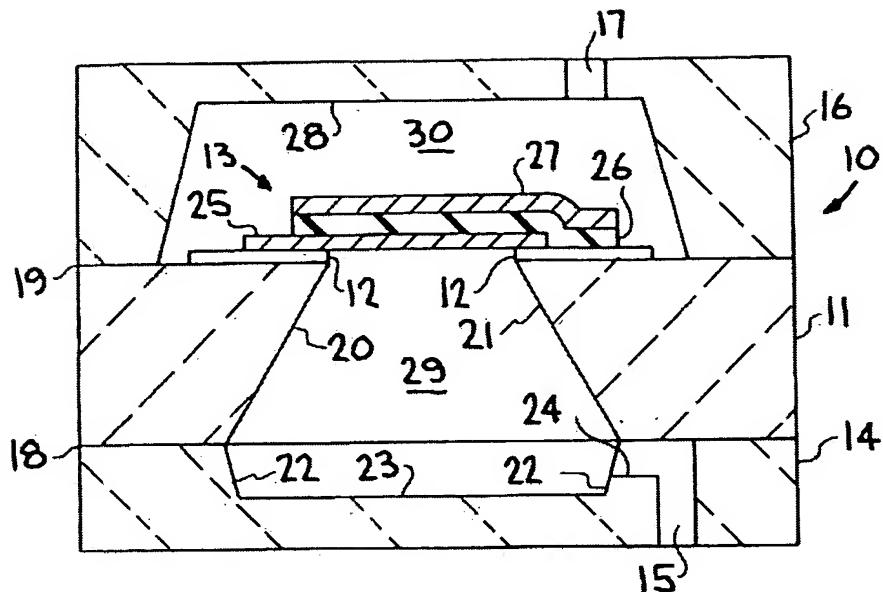


FIG. 1

Exhibit A: FIG. 1 of Jankowski

A PERSON OF ORDINARY SKILL IN THE ART WOULD NOT HAVE BEEN MOTIVATED
TO COMBINE JANKOWSKI AND TANAKA

A person of ordinary skill in the art would not have been motivated to modify the fuel cell in Jankowski with the fuel absorber in Tanaka to serve as a reservoir of fuel when the initial fuel source is depleted as suggested in the Action (see Action, pg 4). Specifically, as set forth above, Jankowski teaches that the fuel reservoir is incorporated with the fuel cell to provide a portable power source. (Jankowski, [0012], [0018]). Therefore, even assuming that the fuel reservoir in Jankowski is the “initial fuel source” and that the fuel absorber in Tanaka is configured between the fuel reservoir and the electrode 25, the fuel absorber would merely function as a buffer between the fuel reservoir and the electrode 25, and not as an additional fuel reservoir. That is, since the fuel absorber would receive all its fuel from the fuel reservoir, and since the fuel reservoir is configured as a portable fuel source, the portable operation of the fuel cell would still be limited by the quantity of fuel in the fuel reservoir, and not the fuel absorber.

As a result, such a combination would not provide any additional functionality to the portable power source in Jankowski. Rather, the combination would complicate and add to the expense of the portable power source in Jankowski.

THE COMBINATION OF JANKOWSKI AND TANAKA FAILS TO TEACH THE CLAIMED INVENTION

Even assuming for the moment, without admitting, that a person was motivated to combine the teachings of Jankowski and Tanaka, such a combination still fails to teach the claimed invention. Specifically, the fuel absorber in Tanaka, which functions as a portable fuel source, would replace the fuel reservoir in Jankowski, which also functions as a portable fuel source. That is, the fuel absorber would supply fuel to the electrode 25 through the manifold structure (i.e., the fuel inlet 15 and the fuel channel 29). Therefore, at least the manifold structure would be disposed between the fuel absorber and the electrode 25. As a result, such a combination fails to teach the recited features of “*a reservoir containing fuel disposed with the first electrode*” or “*where the fuel is integrated into the material of at least one of the first electrode and an adjacent layer....*” (Cl. 1, emphasis added).

As a result of the foregoing, it is respectfully submitted that claim 1 is patentable over both Jankowski and Tanaka.

DEPENDENT CLAIMS 5-10

It is respectfully submitted that these rejections are moot since claim 1 is patentable for at least the reasons as set forth above.

INDEPENDENT CLAIM 13

Claim 13 recites a method for manufacturing an integrated fuel cell and integrated circuit device. The method includes, *inter alia*, “*configuring a fuel delivery device as an integral part*

of one of the electrodes....” (Emphasis added). The Action contends that the combination of Jankowski and Tanaka teaches such a method. (Action, pg 5). The Applicant respectfully disagrees. First, as set forth above, a person of ordinary skill in the art would not have been motivated to modify the portable power source in Jankowski with the fuel absorber in Tanaka since the fuel absorber would not add any additional functionality. Second, even assuming, without admitting, that the power source in Jankowski was modified to incorporate the fuel absorber in Tanaka, the combination would still fail to teach the claimed method. Specifically, the manifold structure of Jankowski would be disposed between the fuel absorber and the electrode 25. Therefore, the fuel absorber would be incapable of being an integral part of the electrode 25. As a result, it is respectfully submitted that claim 13 is patentable over both Jankowski and Tanaka.

12. Claim 11 currently stands rejected under 35 U.S.C. §103(a) for allegedly being unpatentable over Jankowski in view of Tanaka and U.S. Appln. No. 2002/0268560 to Mukerjee et al. (hereinafter “Mukerjee”).

It is respectfully submitted that this rejection is moot since claim 1 is patentable for at least the reasons as set forth above.

13. Claims 1-3 currently stand rejected on the grounds of non-statutory obviousness-type double patenting in view of claims 1, 4, 6, 11-12 and 14-16 of U.S. Patent No. 7,422,816 to Erdler et al. (hereinafter “Erdler”).

A terminal disclaimer is enclosed herewith.

For all the foregoing reasons, reconsideration and allowance of claims 1-23 and 25 is respectfully requested.

If a telephone interview could assist in the prosecution of this application, please call the undersigned attorney.

Respectfully submitted,



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